

REMARKS

The Examiner is thanked for the thorough review and consideration of the present application. The non-final Office Action dated October 6, 2003 has been received and its content carefully reviewed.

By this Response, claim 12 has been amended, and the title of the invention has been amended. No new matter has been added. Claims 1-25 are pending, with claims 1-11 being withdrawn from consideration as being drawn to a non-elected group. Reconsideration and withdrawal of the objection and rejections are requested based upon the above amendments and the following remarks.

In the Office Action, claim 12 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, there was insufficient antecedent basis for the "ohmic contact layer" in claim 12. Applicant has amended claim 12 to ensure a proper antecedent basis for each elements. Withdrawal of the rejection is requested.

In the Office Action, the title of the invention is objected to as not descriptive. Applicant has amended the title of the invention to be more descriptive of the claimed invention. Accordingly, the objection is overcome. Withdrawal of the objection is requested.

In the Office Action, claims 12-25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Related Art in view of U.S. Patent No. 5,990,987, issued to Tanaka. Applicant traverses the rejection because no combination of the Related Art and Tanaka teach or suggest the combined features recited in the claims of the present application. In particular, the Related Art and Tanaka fail to teach or suggest a method of forming an array substrate for an in-plane switching liquid crystal display device that includes, among other features, "simultaneously thermal treating the alignment layer and the source and drain electrode", as recited in amended independent claim 12 of the present application.

The Office Action concedes that the Related Art teaches a method that includes four masks and fails to teach all the recited features of the present application. To compensate for the deficient teachings of the Related Art, the Office Action relies upon Tanaka. Based upon the

teachings of Tanaka, the Office Action alleges that it would have been obvious to one of ordinary skill in the art to modify the method of manufacturing the array substrate described in the Related Art “by adopting a method wherein less photographic steps are used to form the elements as in the instant invention so that production yield is improved and thus cost is reduced, as per the teachings of Tanaka” (Office Action, page 5).

Tanaka discloses “a transverse electrical field type active matrix liquid crystal display apparatus having thin-film transistors as switching device in which the number of production steps can be decreased” (col. 2, lines 63-67). In Tanaka, “the etching step of forming the gate electrode, gate bus line and the counter electrode and the subsequent island etching step can be executed as a sole photolithographic step employing the same photoresist, so that the transverse electrical field type active matrix liquid crystal display apparatus of a low resistance wiring can be fabricated by a sum total of two photolithographic steps” (col. 3, lines 44-50).

The three fabrication masks of Tanaka include: a source electrode, a drain electrode and a pixel electrode formed by a first mask; an ohmic contact layer formed by a second mask; and a gate electrode, an active layer and a common electrode formed by a third mask. (See claim 3). In contrast to the method of Tanaka, the method disclosed in the present invention includes, “patterning the first metal layer using a first mask to form a gate line having a gate electrode and a common line having a plurality of common electrodes”, “forming a semiconductor layer on the gate insulation layer using a second mask”, and “patterning the second metal layer using a third mask to form a data line having a source electrode, a pixel connecting line connecting a plurality of pixel electrodes, and a drain electrode that is spaced apart from the source electrode” (see, claim 12). Thus, the method recited in the present application is different than the method disclosed in Tanaka, as well as the fact that Tanaka fails to teach or suggest “simultaneously thermal-treating the alignment layer and the source and drain electrodes”, as recited in claim 12.

Because Tanaka fails to teach at least the above features recited in claim 12, Tanaka fails to remedy the deficient teachings of the Related Art, and no combination of the Related Art and Tanaka would provide a method have the recited features of claim 12 and its dependent claims 13-25. As such, rejected claims 12-25 are patentable over the Related Art and Tanaka. Reconsideration and withdrawal of the rejection are requested. If the Examiner deems that a

Application No.: 10/067,845
Amendment dated December 22, 2003
Reply to Office Action dated October 6, 2003

Docket No.: 8733.592.00-US

telephone conversation would further the prosecution of this application, the Examiner is invited to call the undersigned at (202) 496-7500.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding objection and rejections of the claims and to pass this application to issue.

Dated: December 22, 2003

Respectfully submitted,

By Valerie Hayes
Valerie Hayes

Registration No.: 53,005
MCKENNA LONG & ALDRIDGE LLP
1900 K Street, N.W.
Washington, DC 20006
(202) 496-7500
Attorneys for Applicant

Application No.: 10/067,845
Amendment dated December 22, 2003
Reply to Office Action dated October 6, 2003

Docket No.: 8733.592.00-US

telephone conversation would further the prosecution of this application, the Examiner is invited to call the undersigned at (202) 496-7500.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding objection and rejections of the claims and to pass this application to issue.

Dated: December 22, 2003

Respectfully submitted,

By Valerie Hayes
Valerie Hayes

Registration No.: 53,005
MCKENNA LONG & ALDRIDGE LLP
1900 K Street, N.W.
Washington, DC 20006
(202) 496-7500
Attorneys for Applicant